UBD Unit Design Template

<table>
<tr><td>Time Frame: 3-4 weeks</td><td>Unit Title: Atoms and the elements</td><td>Course Name: Physical Science</td></tr>
<tr><td colspan="3">Stage 1: Desired Results</td></tr>
<tr><td>Established Goal(s)</td><td colspan="2">Transferable Skills</td></tr>
<tr><td rowspan="5"><u>Enduring Understandings</u>
NJSHS Competencies
Patterns

Systems and System

Models Energy and Matter

in Systems Structure and

Function

NGSS
HS- PS3-2 Energy

HS-PS1-1 Structure and Properties of Matter

HS-PS1-8S Structure and Properties of Matter

HS-ESS1-3 Space Systems

21st Century Skills
Research Skills

Creativity

Social-justice Literacy

Problem Solving

Collaboration</td><td colspan="2">Students will be able to independently use their learning to...

● Create graphic displays of information
● Research information
● Problem solving
● Understand gender bias
● Develop systems of organization and categorization
● Spectrometry</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td><u>Understandings</u>
● Students will understand...
● Atomic structure
● The formation of the elements in the star cycle
● The periodic table</td><td><u>Essential Questions</u>
● What is the structure of an atom?
● Where did the elements come from? ● What kinds of elements are there?
● How was the periodic table created?</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
</table>

	Students will know... ● Atomic number and mass number ● Bohr's model ● Electron configuration ● The star cycle ● The process of stellar nucleosynthesis ● Trends of the periodic table ● The development of the periodic table	Students will be able..... ● Determine an element's electron configuration, number of protons and neutrons by reading the periodic table. ● Draw a Borh's model of elements up to 18 ● State the steps of the star cycle ● Explain how formation of elements in the stars ● Use a spectroscope to identify an element based on its emission spectrum ● Explain periodic table trends and structure ● Explain the history of the periodic table